

LISTING OF CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (Currently amended) An expendable container comprising:
an expendable tank configured to store an expendable and having a piezoelectric sensor element attached thereto, the piezoelectric sensor element having a characteristic;
a driving circuit configured to energize and de-energize the piezoelectric sensor element;
a detection signal generation circuit configured to generate a detection signal including cycle information representing a cycle of an output voltage wave of the piezoelectric sensor element after the driving circuit energizes and de-energizes the piezoelectric sensor element; and
a control module configured to control at least one of an impedance of a de-energizing circuit through which the piezoelectric sensor element de-energizes and a de-energizing time, in accordance with the characteristic of the piezoelectric sensor element, so as to be a certain level that reduces a noise element present in detecting the cycle information of the detection signal, wherein
the cycle information is available for determining whether a residual quantity of the expendable is greater than a preset level, and
the control module is configured to vary a property affecting an output signal of the piezoelectric sensor element.

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2. (Previously presented) The expendable container in accordance with claim 1, wherein the control module is configured to vary a de-energizing time constant of the piezoelectric sensor element.

3. (Previously presented) The expendable container in accordance with claim 1, wherein the control module is configured to vary a de-energizing time of the piezoelectric sensor element.

4. (Previously presented) The expendable container in accordance with claim 1, wherein

the detection signal generation circuit comprises:
a voltage generation circuit configured to generate a predetermined potential difference between a first terminal with a higher potential and a second terminal with a lower potential;
the piezoelectric sensor element having one end connected to the second terminal; an energization control switch connected between the first terminal and the other end of the piezoelectric sensor element, and configured to control on and off energizing from the first terminal to the piezoelectric sensor element according to a control output from the control module;

a de-energization control switch connected between the other end of the piezoelectric sensor element and the second terminal, and configured to control on and off de-energizing from the piezoelectric sensor element to the second terminal according to the control output from the control module; and

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a resistive circuit connected between the other end of the piezoelectric sensor element and the second terminal, and having a variable resistance, wherein the control module is configured to control the on-off of the energization control switch, the on-off of the de-energizing control switch, and the resistance of the resistive circuit.

5-13. (Canceled)